

DEVELOPMENT OF GPR124 WILDTYPE AND KNOCKOUT BRAIN ENDOTHELIAL REPORTER CELLS

SUMMARY

The National Cancer Institute seeks parties interested in co-discovery and co-development of safe and effective TEM5 agonists and/or antagonists that modulate WNT signaling.

REFERENCE NUMBER

E-079-2015

PRODUCT TYPE

- Research Materials

KEYWORDS

- Wnt
- catenin
- TEM5
- GPR 124
- cell
- assay
- screen

COLLABORATION OPPORTUNITY

This invention is available for licensing.

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DESCRIPTION OF TECHNOLOGY

Aberrant function of the WNT-b-catenin pathway is a common underlying cause of tumorigenesis. Despite the attractiveness of the WNT-b-catenin pathway as a therapeutic target, WNT dependent cell signaling is also crucial for normal tissue development, and is ubiquitous in all organs. As a result, WNT-b-catenin pathway inhibitors cause many side effects and fail to meet FDA safety standards. A more targeted approach is needed to develop safe and effective WNT signaling inhibitors.

Researchers at the NCI [Mouse Cancer Genetics Program](#) have developed a reporter cell based assay to identify inhibitors of TEM5 (GPR124), a co-receptor for Wnt7 that is primarily localized in the

NCI Technology Transfer Center

<https://techtransfer.cancer.gov/pdf/e-079-2015.pdf>

cerebrovascular tissue and further enriched in tumor vasculature. Therapeutics specifically targeting TEM5, which is locally enriched in and required for the formation of tumor associated vasculature, have greater potential to avoid the development and regulatory pitfalls associated with other WNT signaling inhibitors. The National Cancer Institute therefore seeks parties interested in co-discovery and co-development of safe and effective TEM5 agonists and/or antagonists that modulate WNT signaling.

POTENTIAL COMMERCIAL APPLICATIONS

- High throughput screen for TEM5 (GPR12) inhibitors

COMPETITIVE ADVANTAGES

- TEM5 is selectively upregulated in cerebrovasculature of tumors
- TEM5 inhibitors have less potential for causing side effects compared to other Wnt signaling inhibitors

INVENTOR(S)

[Brad St. Croix](#) (NCI)

DEVELOPMENT STAGE

- Discovery (Lead Identification)

PUBLICATIONS

- Posokhova E et al., [PMID:25558062](#)
- Cullen M et al., PMID:21421844

PATENT STATUS

- **Not Patented:** Research Tool - Patent protection is not being pursued for this technology

THERAPEUTIC AREA

- Central Nervous System, Mental and Behavioral, Pain